

26 October 2016

Ms Fiona Towers
Executive Director, Energy and Transport
Independent Pricing and Regulatory Tribunal
PO Box K35, Haymarket Post Shop
NSW 1240

Submitted by email

Dear Ms Towers

TransGrid welcomes the opportunity to respond to the Energy - Supplementary Draft Report published by the Independent Pricing and Regulatory Tribunal (IPART) as part of its consultation process in recommending reliability standards for electricity transmission in New South Wales (NSW).

TransGrid is the operator and manager of the high voltage transmission network connecting generators, distributors and major end users in NSW and the Australian Capital Territory. TransGrid's network is also interconnected to Queensland and Victoria, providing an electricity system that makes interstate energy trading possible.

TransGrid acknowledges that IPART's Reliability Standards will result in a revised set of transmission reliability standards being recommended to, and then set by, the Minister for Industry, Resources and Energy in advance of TransGrid's revenue proposal to be lodged to the Australian Energy Regulator by 31 January 2017.

The revenue proposal is currently being finalised using the unserved energy allowances recommended by IPART. TransGrid notes that there may be insufficient time for the revenue proposal to reflect the Minister's decision regarding the unserved energy allowances for the supply points, if they are materially changed from the IPART recommendation.

TransGrid is also encouraged that the supplementary draft report allows a more flexible way of providing the level of reliability that consumers value and expect whilst providing an economic balance between the cost of providing reliability against the cost to consumers of supply interruptions.

Unserved energy allowance for Inner Sydney

TransGrid supports the recommended annual unserved energy allowance of 0.6 minutes per year at average demand for a single grouping of the five Inner Sydney bulk supply points (Beaconsfield, Haymarket, Rookwood Road, Sydney North and Sydney South). The load served in Inner Sydney is far more complex than other areas of NSW given the tighter meshing of both TransGrid and Ausgrid network assets.

TransGrid endorses the approach followed by IPART, where the reliability standard is set based on the expected lifecycle average failure rate of a typical asset of that asset type.

TransGrid and Ausgrid are currently jointly assessing the economic benefits of replacement of transmission assets supplying Inner Sydney. A Regulatory Investment Test for Transmission Project Specification and Consultation Report (PSCR) was released for public submissions on 11th October 2016. The PSCR has highlighted IPART's draft recommendation for the Inner Sydney area that the unserved energy should not be more than 0.6 minutes per year, at average demand. TransGrid will take into account compliance with IPART's recommended reliability target together with any feedback on the PSCR from other stakeholders in its preparation of the Project Assessment Draft Report and in recommending a preferred option.

Unserved energy allowance for Munyang and Wellington Town

TransGrid questions IPART's recommended allowance for expected unserved energy for Munyang of 191 minutes and supports the recommended allowance for expected unserved energy for Wellington Town of 21 minutes.

The load served at the Munyang bulk supply point has a very pronounced winter peak demand (to supply the ski fields) and low summer demand, resulting in a load factor of 0.18. The use of this load factor to estimate the optimal unserved energy does not reflect the seasonality of the load and has resulted in a much higher unserved energy allowance than calculated by TransGrid (less than 1 minute). The implementation of IPART's recommended allowance, in the long term, could result in a large deterioration in reliability for electricity users in the area.

Munyang is situated in close proximity to Murray River, is environmentally sensitive, and therefore requires special environmental impact mitigation measures, such as using gas filled transformers. Such factors that affect the network investments may not have been accurately reflected in the economic modelling.

TransGrid recommends that IPART take into account the potentially higher value of customer reliability during the winter in estimating the allowance for expected unserved energy for Munyang.

The load served at Wellington Town is achieved by a 132kV transmission line tee connection. There is a back-up supply, capable of supplying most of the load via Essential Energy's network which requires approximately one hour to switch. The unserved energy allowance calculated by TransGrid is slightly over 21 minutes and is reflective of this switching time. Compliance with IPART's recommended allowance will require a non-network solution or a network investment, such as the turn in and out of the current 132kV transmission line into a new 132kV busbar at Essential Energy's Wellington substation. TransGrid recommends IPART review the unserved energy for Wellington Town.

Unserved energy allowance for Broken Hill, Molong, Mudgee

TransGrid notes IPART's recommended allowance for expected unserved energy for Broken Hill 220kV of 5 minutes, Molong of 46 minutes and Mudgee of 14 minutes.

The load served at the Broken Hill 220kV bulk supply point is for a single mine customer and has resulted in a lower unserved energy allowance than calculated by TransGrid (less than 5 minutes). The implementation of IPART's recommended allowance will require a new solution. This could consist of a new transmission line, installation of battery storage, a new generator, or load curtailment at Broken Hill

The load served at Molong bulk supply point is achieved by a single 132/66kV transformer which does not have a back-up supply, and restoration is dependent on how quickly the fault can be repaired. The unserved energy allowance calculated by TransGrid (around 100

minutes) is reflective of the transformer restoration time. The implementation of IPART's recommended allowance will require a non-network solution or a network investment, such as installation of a second 132/66kV transformer, at a cost of approximately \$4 million, at Molong to achieve the standard. TransGrid will include this augmentation in its revenue proposal.

The load served at Mudgee is achieved by a 132kV transmission line tee connection. There is a back-up supply via Essential Energy's network which requires approximately one hour to switch. The unserved energy allowance calculated by TransGrid (around 30 minutes) is reflective of this switching time. The implementation of IPART's recommended allowance will require a non-network solution or a network investment such as the turn in and out of the current 132kV transmission line into a new 132kV busbar at Essential Energy's Mudgee substation to achieve the standard. TransGrid recommends IPART review the unserved energy allowed for Mudgee.

The draft standard provides flexibility in meeting the requirements

TransGrid supports the draft recommendation to allow for flexibility in how TransGrid meets its reliability requirements to drive better outcomes for consumers in the longer term. A range of potential solutions currently exist and more are likely to emerge over time. Allowing flexibility in how these requirements are met will help to ensure that the most efficient solutions are considered. TransGrid will continue to investigate and pursue economically efficient non-network and other innovative options to address network and reliability needs and welcomes IPART's use of output-focussed and solution-agnostic terminology.

Implementation as planning standards

TransGrid supports the supplementary draft report recommendation for implementation as a planning standard. TransGrid will undertake simulation modelling as part of the planning process, for IPART's review when assessing compliance with the standard

TransGrid notes that further engagement with IPART will be required to finalise the detailed process for demonstrating compliance, to manage changes to maximum demand forecast and to cater for new bulk supply points. Some of the points requiring further clarification are given in the attached appendix.

Ongoing engagement with IPART and other stakeholders

TransGrid looks forward to continuing engagement with IPART and other stakeholders to finalise this important review. TransGrid also acknowledges that further detailed engagement with all parties will be particularly important as TransGrid looks to implement the standard as part of its planning, reporting and compliance processes.

If you would like to discuss any matter raised in this submission, please contact me on (02) 9284 3088.

Yours faithfully

Gerárd Reiter
Executive General Manager/Asset Management

Appendix:

Reference	Issue	Potential Impact	Suggestion
1.2 (Start date)	TransGrid may not have the network augmentations in place to satisfy the new reliability standard by 1 July 2018.	Operationally, the specified level of reliability may not be met until options are in place (2022).	Confirm explicitly that the standard is a planning standard and will not be required to be met operationally by 1 July 2018.
2.2.4	Ensuring compliance	"We expect that TransGrid would undertake simulation modelling as part of the planning process, which IPART would review when assessing compliance with the standard."	Clarify how the compliance process will work.
3.3.1	The risks considered by TransGrid for multiple outages do not match IPART's optimisation model (modified N-2) for inner Sydney.	The unserved energy due to the poor performance of the ageing cables supplying inner Sydney will be under estimated.	Clarification that all potential failure modes which materially contribute to unserved energy may be considered.
3.2.5	Grouping of Supply Points for Inner Sydney.	This could half the EUE allowance for Inner Sydney depending on how it is calculated.	Confirm that 0.6 minutes of EUE only refers to inner Sydney loads
3.2	Definition of 'Average demand'	IPART may have used 50% of maximum demand, and not the average demand, for defining USE in minutes.	Provide clarification on "average demand" and "maximum demand".